ATTACHMENT 3

Data Validation Memorandum

To: J Garcia
From: KA Storne
Re: Review of the ISRT Source Area Investigation Conducted December 2002
File: 10040/32224.001.001
Date: January 30, 2003

cc: SW Kaczmar
SJ Spiegel

This report addresses a data quality review for soil and water samples, field blank, trip blanks, and field duplicates collected as part of the Industri-Plex Remedial Trust (ISRT) Source Area investigation. Collection activities were conducted by Roux Associates in December 2002.

The sample delivery group, collection date, sample collection identifications, associated laboratory identifications, and analysis requested for this investigation are presented in Table 1-2. Attachment A presents the qualified sample result sheets. Attachment B presents the chain-of-custody forms presented in the data packages.

The following table summarizes the analysis performed for this investigation.

Table 1-1. *Analytical methods and references*

Parameter	Method	Reference
VOCs	USEPA Methods 5030B/8021B	1
Percent Total Solids	160.3	2

Note:
1 United States Environmental Protection Agency (USEPA). 1996. *Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846),* 3rd Edition. Washington, D.C., 1986 as updated through December 1996.
2 United States Environmental Protection Agency (USEPA). 1983. *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020.

VOCs indicates volatile organic compounds and includes benzene and toluene.

Lancaster Laboratories of Lancaster, Pennsylvania (Lancaster Labs) performed the volatile organic compounds (VOCs) and percent solids analyses. The laboratory data were provided in Contract Laboratory Program (CLP) – like deliverable format. During the validation process, the analytical data were evaluated by O'Brien & Gere Engineers using the quality assurance/quality control (QA/QC) criteria established in the following documents as guidance.

- Blasland, Bouck & Lee. 1999. *Quality Assurance Project Plan for the Final Ground-Water/Surface-Water Investigation Plan (GSIP) Scope of Work (SOW) Groundwater and Soil Investigation, Industri-Plex Site Remedial Trust, Woburn, Massachusetts*. Syracuse, New York.
- U.S. Environmental Protection Agency (USEPA). 1983. *Method for Chemical Analysis of Water and Wastes.* Center for Environmental Research Information, Office of Research and Development, Cincinnati, Ohio.
- U.S. Environmental Protection Agency (USEPA). 1996a. *Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846), 3rd Edition*. 1986 as updated through December 1996. Washington, D.C.

Data affected by excursions from the QA/QC criteria were qualified based on guidance provided in the following document and professional judgment:

- U.S. Environmental Protection Agency (USEPA). 1996b. *Region 1 USEPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses*. Lexington, Massachusetts.

Since the USEPA Region I guidelines apply to data generated using CLP methods, the application of these validation guidelines was modified since non-CLP methods were used in the analysis of samples collected for this investigation.

The review included checking the following parameters:

- Chain-of-custody records
- Holding times, sample preservation, sample collection, and percentage solids
- Calibrations
- Blank analysis
- Matrix spike/matrix spike duplicate (MS/MSD) analysis
- Laboratory control sample (LCS) analysis
- Field duplicate analysis
- Surrogate recovery
- Internal standards performance
- Target analyte quantitation, identification, and reported detection limits
- System performance, and
- Documentation completeness.

All samples collected for this investigation were submitted for data validation and are presented in Table 1-2 below.

Table 1-2. *Sample cross reference list*

Sample Delivery Group	Date Collected	Client ID	Laboratory ID	Analysis Requested
SIP 77	12/2/02	RX-2 (2.5-5')	3952446	VOCs, Percent Solids
		RX-2 (15')	3952447	VOCs
		RX-2 (33')	3952448	VOCs
		TB-120202 (W)	3952449	VOCs
		TB-120202 (S)	3952450	VOCs, Percent Solids
SIP 77	12/3/02	RX-4 (15')	3953597	VOCs
		RX-4 (12.5-15')	3953598	VOCs, Percent Solids
		RX-6 (15')	3953599	VOCs
		RX-6 (12.5-15')	3953600	VOCs, Percent Solids
		RX-4 (29')	3953601	VOCs
		RX-6 (29')	3953602	VOCs
		TB-120302 (W)	3953603	VOCs
		TB-120302 (S)	3953604	VOCs, Percent Solids
SIP 78	12/4/02	RX-3 (15')	3954649	VOCs
		RX-3 (0-2.5')	3954650	VOCs, Percent Solids
		RX-9 (15')	3954651	VOCs
		RX-9 (7.5-10')	3954652	VOCs, Percent Solids
		RX-3 (23')	3954653	VOCs
		TB-120402 (W)	3954656	VOCs
		TB-120402 (S)	3954657	VOCs, Percent Solids
		RX-9 (15') DUP	3954654	VOCs
		RX-9 (7.5-10') DUP [RX-9 (7.5-10')]	3954655	VOCs, Percent Solids

Table 1-2. *Sample cross reference list*

Sample Delivery Group	Date Collected	Client ID	Laboratory ID	Analysis Requested
SIP 78	12/5/02	RX-1 (15')	3955391	VOCs
		RX-1 (10-12.5')	3955390	VOCs, Percent Solids
		RX-5 (15')	3955392	VOCs
		RX-5 (7.5-10')	3955393	VOCs, Percent Solids
		RX-9 (33')	3955394	VOCs
		TB-120402 (W)	3955397	VOCs
		TB-120402 (S)	3955398	VOCs, Percent Solids
		RX-5 (29')	3955395	VOCs
		RX-1 (30')	3955396	VOCs
SIP 78	12/6/02	RX-8 (15')	3956263	VOCs
		RX-8 (7.5-10')	3956264	VOCs, Percent Solids
		RX-8 (31')	3956265	VOCs
		RX-11 (15')	3956266	VOCs
		RX-11 (7.5-10')	3956267	VOCs, Percent Solids
		RX-11 (31')	3956268	VOCs
		TB-120602 (W)	3956269	VOCs
		TB-120602 (S)	3956270	VOCs, Percent Solids
SIP 79	12/9/02	RX-12 (15')	3957303	VOCs
		RX-13 (15')	3957304	VOCs
		RX-12 (7.5-10')	3957305	VOCs, Percent Solids
		RX-13 (5-7.5')	3957306	VOCs, Percent Solids
		RX-12 (31')	3957307	VOCs
		RX-13 (29')	3957308	VOCs
		TB-120902 (W)	3957309	VOCs
		TB-120902 (S)	3957310	VOCs, Percent Solids
SIP 80	12/10/02	RX-14 (15')	3958024	VOCs
		RX-14 (0-2.5')	3958025	VOCs, Percent Solids
		RX-17 (15')	3958026	VOCs
		RX-17 (5-7.5')	3958027	VOCs, Percent Solids
		RX-14 (29')	3958028	VOCs
		RX-17 (33')	3958029	VOCs
		TB-121002 (W)	3958030	VOCs
		TB-121002 (S)	3958031	VOCs, Percent Solids
		RX-14 (15') DUP [RX-14 (15')]	3958032	VOCs
SIP 80	12/11/02	RX-15 (15')	3959403	VOCs
		RX-15 (7.5-10')	3959404	VOCs, Percent Solids
		RX-16 (15')	3959405	VOCs
		RX-16 (7.5-10')	3959406	VOCs, Percent Solids
		RX-15 (29')	3959408	VOCs
		RX-16 (29')	3959409	VOCs
		TB-121102 (S)	3959411	VOCs, Percent Solids
		TB-121102 (W)	3959410	VOCs
		RX-16 (7.5-10') DUP [RX-16 (7.5-10')]	3959407	VOCs, Percent Solids

Table 1-2. *Sample cross reference list*

Sample Delivery Group	Date Collected	Client ID	Laboratory ID	Analysis Requested
SIP 81	12/12/02	RX-7 (15')	3960338	VOCs
		RX-7 (2.5-5')	3960339	VOCs, Percent Solids
		RX-10 (15')	3960340	VOCs
		RX-10 (0-2.5')	3960341	VOCs, Percent Solids
		RX-7 (31')	3960342	VOCs
		RX-10 (25')	3960344	VOCs
		TB-121202 (W)	3960345	VOCs
		TB-121202 (S)	3960346	VOCs, Percent Solids
		RX-7 (31') DUP [RX-7 (31')]	3960343	VOCs
SIP 81	12/13/02	RX-18 (30')	3961913	VOCs
		RX-19 (30')	3961914	VOCs
		RX-18 (13')	3961915	VOCs
		RX-18 (13') DUP [RX-18 (13')]	3961916	VOCs
		TB-121302 (W)	3961917	VOCs
		TB-121302 (S)	3961918	VOCs, Percent Solids
		FB-121302-1	3961919	VOCs
		FB-121302-2	3961920	VOCs
		RX-19 (2.5-5')	3961921	VOCs, Percent Solids
		RX-18 (10-15')	3961922	VOCs, Percent Solids
		RX-8 (5-7.5')*	3961923	VOCs, Percent Solids
SIP 82	12/19/02	RX-19 (13')	3967022	VOCs
		RX-19 (22')	3967023	VOCs
		RX-18 (20')	3967024	VOCs
		TB-121902 (W)	3967025	VOCs

Note:

VOCs indicates volatile organic compounds and includes benzene and toluene.
TB indicates trip blank.
FB indicates field blank.

The sample identification in brackets indicates the sample location from which the duplicate sample was collected.

Soil samples were collected using methanol preservation.
Water samples were not preserved upon collection.

* Indicates that the laboratory noted that the sample vial leaked after sample collection.

The following sections of this memorandum summarize the quality assurance/quality control (QA/QC) parameters and evaluation results.

VOLATILE ORGANIC COMPOUND DATA EVALUATION SUMMARY

The following QA/QC parameters were found to meet validation criteria or did not result in additional qualification of sample results:

- Percentage solids
- LCS analysis
- Internal standards performance, and
- System performance

Excursions from validation criteria and additional observations are summarized below.

I. Chain-of-custody records

The chain-of-custody records associated with the collection of samples for this investigation were incomplete since the shipment method was not documented. For each day of sample collection, Lancaster Labs received the samples on the next day.

The chain-of-custody record associated with the samples collected 12/11/02 was incomplete. The name, date, and time that the field individual relinquished the samples to the courier were not documented on the record. The samples were received at the laboratory on 12/12/02.

II. Sample collection

Soil samples were collected in pre-weighed vials containing 10 milliliters of methanol. After sample collection, the weight of each sample was determined by Lancaster Labs by weight comparison. One milliliter of the sample methanol extract was added to 25 milliliters of water for the purge and trap analysis process.

III. Sample preservation

Water samples were not preserved during sample collection.

The cooler temperature for samples collected 12/19/02 was recorded by Lancaster Labs at 12 °C, which is outside of the acceptable cooler temperature range of 4 ± 2 °C. The laboratory noted that bagged ice was found in the cooler next to the samples. Results for samples shipped in the impacted cooler were qualified as approximate (UJ, J) due to the sample preservation excursion. Samples impacted included: RX-19 (13'), RX-19 (22'), RX-18 (20'), TB-121902 (W).

IV. Holding times

Since the water samples were not preserved during sample collection, the holding time that was used to evaluate VOC samples was seven days from collection.

The analysis utilized to report toluene in water sample RX-5 (15') was performed one day outside of the seven day holding time. As a result of the holding time excursion, the result for toluene in sample RX-5 (15') was qualified as approximate (J).

V. Surrogate recovery

The recoveries for surrogates in samples analyzed for VOCs were outside of the laboratory control limits. Surrogate recoveries that were outside of control limits and were associated with dilution analyses were not evaluated. The results for target analytes associated with surrogate recoveries greater than the control limits were qualified as approximate (J) to indicate biased high results. The results for target analytes associated with surrogate recoveries less than the control limits were qualified as approximate (J) to indicate biased low results.

The laboratory noted that the vial containing sample RX-18 (5-7.5') leaked after sample collection and methanol was lost. Since the amount of surrogate used to spike samples containing 10 milliliters of methanol was used to analyze the sample, the relative concentration of the surrogate was elevated.

The surrogate accuracy excursions are summarized in the following table:

Table 1-3. *Surrogate recovery excursions for VOC analyses*

Sample ID	Surrogate	Excursion	Affected Analyte	Action
RX-5 (15')	Trifluorotoluene	135 %R	Toluene	J
RX-17 (5-7.5')	Trifluorotoluene	60 %R	Benzene	J
			Toluene	J
RX-18 (5-7.5')	Trifluorotoluene	259 %R	Benzene	J
			Toluene	J

Note:
%R indicates percent recovery.

VI. MS/MSD analysis

Matrix spike and matrix spike duplicate samples were not collected as part of the ISRT Source Area investigation. The laboratory performed MS/MSD analyses for each sample delivery group (SDG) in accordance with the internal laboratory quality control policy. The laboratory used non-project samples for the MS/MSDs, unless sufficient sample volume was available for an MS/MSD analysis.

VII. Blank analysis

Trip blanks containing methanol were utilized to evaluate contamination introduced during sample collection and shipment of soil samples.

Target analytes were detected in trip blanks associated with samples collected for this investigation. Samples that contained target analytes at less than five times the blank concentration were qualified as undetected (U) due to blank contamination. The blank contamination excursions are summarized in the following table:

Table 1-4. *Blank contamination excursions for VOC analyses*

Blank ID	Target Analyte	Detected Concentration	Affected Samples	Action and Result
TB-120302 (S)	Toluene	3.5 µg/Kg	RX-6 (12.5-15')	1.8 µg/Kg U
TB-121902 (W)	Toluene	0.22 µg/L	RX-19 (13')	0.57 µg/L U
			RX-19 (22')	5.0 µg/L U

Note:
TB indicates trip blank.

VIII. Calibration

The percent drift for analytes in the calibration verification analyzed 12/10/02 was outside of the method criteria of 15 %. The results in samples associated with the calibration verification excursions were qualified as approximate (J) to indicate minor accuracy excursions. The calibration excursions are summarized in the following table:

Table 1-5. *Calibration excursions for VOC analyses*

Calibration ID	Target Analytes	Excursion	Affected Samples	Action
CCV 12/10/02 @ 0851 HP5890-51	Benzene	19 %D	RX-11 (15')	J
			RX-11 (31')	J
CCV 12/10/02 @ 0851 HP5890-51	Toluene	17 %D	RX-11 (15')	J
			RX-11 (31')	J

Note:
%D Indicates percent drift.

IX. Field Duplicate analysis

Field duplicates were collected at a frequency of one per every 10 environmental samples for each type of matrix.

X. Target analyte identification and quantitation

The analyses of benzene and toluene were performed using single column gas chromatography with a photoionization detector. Lancaster Labs did not perform a second-column confirmation analyses for the benzene and toluene results reported.

XI. Reported detection limits

Dilutions were performed for water and soil environmental samples to maintain the concentration of the target analytes within the calibration range of the instrument.

The laboratory reported the non-detected concentrations using the method detection limit (MDL) values. The qualifier "J" was applied by the laboratory when the analyte concentration was greater than the MDL but less than the limit of quantitation (LOQ) value. This qualifier has been retained during the validation process to indicate that the result is considered to be approximate.

XII. Documentation completeness

As previously described, one milliliter of the methanol extract of soil samples was added to 25 milliliters of water for the purge and trap analysis process. However, for soil samples with concentrations that exceeded the upper calibration limit, additional dilutions were performed. The process that is used by the analysts to generate the additional dilution solution, which was used for the analysis, was not documented by the laboratory. Therefore, that dilution calculation could not be evaluated for the impacted soil samples during the validation process.

As the result of a request of the laboratory to investigate the results for samples TB-120402 and RX-4 (12.5-15'), it was determined that the benzene and toluene results for those samples had been switched. The results were corrected through the data validation process and the laboratory submitted corrected sample result sheets.

DATA USABILITY

Overall data usability with respect to completeness is 100% for benzene and toluene in the soil and water samples collected as part of the (ISRT) Source Area investigation. Therefore, the completeness objective of 90%, as stated in the QAPP, was met.

ATTACHMENT A

ISRT Source Area Investigation Conducted December 2002

Qualified Sample Result Sheets

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

314-674-2025

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 835642. Samples arrived at the laboratory on Friday, December 20, 2002. The PO# for this group is 2000-08-07.

Client Description	Lancaster Labs Number
RX-19(13') Grab Water Sample	3967022
RX-19(22') Grab Water Sample	3967023
RX-18(20') Grab Water Sample	3967024
TB 121902 Water Sample	3967025

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Roux Associates Attn: Mr. Larry McTiernan
1 COPY TO Data Package Group

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3967022

Collected:12/19/2002 09:40 by LC

Account Number: 10666

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

Submitted: 12/20/2002 10:20
Reported: 12/23/2002 at 21:49
Discard: 03/24/2003
RX-19(13') Grab Water Sample
Solutia
ISRT-Woburn, MA

R1913 SDG#: SIP82-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	3.7	0.20	ug/l	1
00777	Toluene	108-88-3	0.57 J	0.20	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/23/2002 14:22	Michael F Barrow	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2002 14:22	Michael F Barrow	n.a.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3967023

Collected:12/19/2002 10:40 by LC

Account Number: 10666

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

Submitted: 12/20/2002 10:20
Reported: 12/23/2002 at 21:49
Discard: 03/24/2003
RX-19(22') Grab Water Sample
Solutia
ISRT-Woburn, MA

R1922 SDG#: SIP82-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	940.	1.0	ug/l	5
00777	Toluene	108-88-3	5.0 J	1.0	ug/l	5

Due to dilution of the sample made necessary by the high level of benzene, normal reporting limits were not attained.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/23/2002 15:07	Michael F Barrow	5
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2002 15:07	Michael F Barrow	n.a.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3967024

Collected:12/19/2002 11:40 by LC

Account Number: 10666

Submitted: 12/20/2002 10:20
Reported: 12/23/2002 at 21:49
Discard: 03/24/2003
RX-18(20') Grab Water Sample
Solutia
ISRT-Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

R1820 SDG#: SIP82-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)						
00776	Benzene	71-43-2	4,800.	QJ	10.	ug/l	50
00777	Toluene	108-88-3	110.		10.	ug/l	50

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/23/2002 15:51	Michael F Barrow	50
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2002 15:51	Michael F Barrow	n.a.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717 656 2300 Fax: 717 656 2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3967025

Collected:12/19/2002 00:00

Account Number: 10666

Submitted: 12/20/2002 10:20
Reported: 12/23/2002 at 21:50
Discard: 03/24/2003
TB 121902 Water Sample
Solutia
ISRT-Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

ST122 SDG#: SIP82-04TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D. UJ	0.20	ug/l	1
00777	Toluene	108-88-3	0.22 J	0.20	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/23/2002 13:10	Michael F Barrow	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/23/2002 13:10	Michael F Barrow	n.a.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

314-674-2025

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 834508. Samples arrived at the laboratory on Friday, December 13, 2002. The PO# for this group is 2000-08-07.

Client Description	Lancaster Labs Number
RX-7 (15') Grab Water Sample	3960338
RX-7 (2.5-5') Grab Soil Sample	3960339
RX-10 (15') Grab Water Sample	3960340
RX-10 (0.2.5') Grab Soil Sample	3960341
RX-7 (31') Grab Water Sample	3960342
RX-7 (31') DUP Grab Water Sample	3960343
RX-10 (25') Grab Water Sample	3960344
TB121202 Water Sample	3960345
TB121202 Methanol Sample	3960346

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Roux, Inc.	Attn: Mr. Larry McTiernan
1 COPY TO	Solutia, Inc.	Attn: Mr. Jorge Garcia
1 COPY TO	Data Package Group	

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Lancaster Laboratories

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300.

Respectfully Submitted,

Erik J. Frederiksen
Group Leader

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MEMBER ACIL

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3960338

Collected:12/12/2002 09:50 by HT

Account Number: 10666

Submitted: 12/13/2002 09:10
Reported: 12/18/2002 at 21:23
Discard: 03/19/2003
RX-7 (15') Grab Water Sample
Solutia
ISRT - Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

RX715 SDG#: SIP81-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	2,500.	2.0	ug/l	10
00777	Toluene	108-88-3	230.	2.0	ug/l	10

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/17/2002 13:42	Melissa D Mann	10
01146	GC VOA Water Prep	SW-846 5030B	1	12/17/2002 13:42	Melissa D Mann	n.a.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 3960339

Collected:12/12/2002 12:15 by HT

Account Number: 10666

Submitted: 12/13/2002 09:10
Reported: 12/18/2002 at 21:24
Discard: 03/19/2003
RX-7 (2.5-5') Grab Soil Sample
Solutia
ISRT - Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

RX755 SDG#: SIP81-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	9.62	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
08180	BTEX (Total Xylenes)					
08183	Benzene	71-43-2	4.7	1.4	ug/kg	15.5
08184	Toluene	108-88-3	N.D.	1.4	ug/kg	15.5
	The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.					
	Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
00405	Field Preserved Methanol					
	The sample submitted for volatile organic analysis was preserved with methanol in the field.					

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	12/14/2002 03:40	Mildred E Zimmerman	1
08180	BTEX (Total Xylenes)	SW-846 8021B	1	12/16/2002 16:03	Stephanie A Selis	15.5

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3960340

Collected:12/12/2002 10:05 by HT

Account Number: 10666

Submitted: 12/13/2002 09:10
Reported: 12/18/2002 at 21:24
Discard: 03/19/2003
RX-10 (15') Grab Water Sample
Solutia
ISRT - Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

X1015 SDG#: SIP81-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	12,000	10.	ug/l	50
00777	Toluene	108-88-3	19. J	10.	ug/l	50

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

The reporting limits were raised because sample dilution was necessary to bring target compounds into the calibration range of the system.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/17/2002 00:43	Martha L Seidel	50
01146	GC VOA Water Prep	SW-846 5030B	1	12/17/2002 00:43	Martha L Seidel	n.a.

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 3960341

Collected:12/12/2002 12:15 by HT

Account Number: 10666

Submitted: 12/13/2002 09:10
Reported: 12/18/2002 at 21:24
Discard: 03/19/2003
RX-10 (0.2.5') Grab Soil Sample
Solutia
ISRT - Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

RX100 SDG#: SIP81-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.55	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
08180	BTEX (Total Xylenes)					
08183	Benzene	71-43-2	23.	1.3	ug/kg	14.8
08184	Toluene	108-88-3	36.	1.3	ug/kg	14.8
	The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.					
	Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
00405	Field Preserved Methanol					
	The sample submitted for volatile organic analysis was preserved with methanol in the field.					

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	12/14/2002 03:40	Mildred E Zimmerman	1
08180	BTEX (Total Xylenes)	SW-846 8021B	1	12/16/2002 16:41	Stephanie A Selis	14.8

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3960342

Collected:12/12/2002 14:05 by HT

Account Number: 10666

Submitted: 12/13/2002 09:10
Reported: 12/18/2002 at 21:24
Discard: 03/19/2003
RX-7 (31') Grab Water Sample
Solutia
ISRT - Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

RX731 SDG#: SIP81-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	4,300.	4.0	ug/l	20
00777	Toluene	108-88-3	820.	4.0	ug/l	20

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis Trial#	Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/17/2002 01:16	Martha L Seidel	20
01146	GC VOA Water Prep	SW-846 5030B	1	12/17/2002 01:16	Martha L Seidel	n.a.

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3960343

Collected:12/12/2002 14:05 by HT

Account Number: 10666

Submitted: 12/13/2002 09:10
Reported: 12/18/2002 at 21:24
Discard: 03/19/2003
RX-7 (31') DUP Grab Water Sample
Solutia
ISRT - Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

RX73D SDG#: SIP81-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	4,300.	4.0	ug/l	20
00777	Toluene	108-88-3	820.	4.0	ug/l	20

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/17/2002 01:48	Martha L Seidel	20
01146	GC VOA Water Prep	SW-846 5030B	1	12/17/2002 01:48	Martha L Seidel	n.a.

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3960344

Collected:12/12/2002 12:45 by HT

Account Number: 10666

Submitted: 12/13/2002 09:10
Reported: 12/18/2002 at 21:24
Discard: 03/19/2003
RX-10 (25') Grab Water Sample
Solutia
ISRT - Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

RX125 SDG#: SIP81-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	13,000.	10.	ug/l	50
00777	Toluene	108-88-3	1,700.	10.	ug/l	50

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/17/2002 02:21	Martha L Seidel	50
01146	GC VOA Water Prep	SW-846 5030B	1	12/17/2002 02:21	Martha L Seidel	n.a.

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Analysis Report

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 3960345

Collected: n.a. by HT

Account Number: 10666

Submitted: 12/13/2002 09:10
Reported: 12/18/2002 at 21:24
Discard: 03/19/2003
TB121202 Water Sample
Solutia
ISRT - Woburn, MA

Solutia, Inc.
575 Maryville Centre Drive
St. Louis MO 63141

TB202 SDG#: SIP81-08TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.20	ug/l	1
00777	Toluene	108-88-3	N.D.	0.20	ug/l	1

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	12/16/2002 22:00	Martha L Seidel	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/16/2002 22:00	Martha L Seidel	n.a.

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